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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,719	05/02/2006	Tetsuya Nakayama	062438	3702
38834	7590	05/26/2009	EXAMINER	
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP			VILAKAZI, SIZO BINDA	
1250 CONNECTICUT AVENUE, NW				
SUITE 700			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20036			3747	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/577,719	NAKAYAMA ET AL.
	Examiner	Art Unit
	SIZO B. VILAKAZI	3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 12 February 2009.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1, 2, 4, 9 and 11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1, 2, 4, 9 and 11 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application

6) Other: _____.

DETAILED ACTION

The Amendments and Applicant arguments submitted on 02/12/2009 have been received and its contents have been carefully considered.

Claim 6 is cancelled.

Claim 11 is added.

Claims 1, 2, 4, 9 and 11 are presented for examination.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 2, 4, 9, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Applicant asserts that the claim elements "tank contents amount measurement means", "an operational value measurement means", "a remaining fuel volume calculation means", "volume comparison means", "tank contents weight measurement means", "remaining fuel weight calculation means", "weight comparison means", and "alarm issue means" are means (or step) plus function limitations that invokes 35 U.S.C. 112, sixth paragraph. However, it is unclear whether the claim element is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph, because the

means are not recited as a “means for”. If applicant wishes to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to:

- (a) Amend the claim to include the phrase “means for” or “step for” in accordance with these guidelines: the phrase “means for” or “step for” must be modified by functional language and the phrase must **not** be modified by sufficient structure, material, or acts for performing the claimed function; or
- (b) Show that the claim limitation is written as a function to be performed and the claim does **not** recite sufficient structure, material, or acts for performing the claimed function which would preclude application of 35 U.S.C. 112, sixth paragraph. For more information, see MPEP § 2181.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reimer (US Patent 6,484,088) in view of Tatsuya (JP Pub 2003-254173) and Katayama (US Patent #4,696,277).

3. In Re claim 1, Reimer discloses:

- a. a working machine (Column 4, Lines 5-7)
- b. a server (fuel optimization server, 41)
- c. a user terminal (Column 13, lines 64-67)
- d. a tank contents amount measurement means (29) which measures an amount of substance contained in a fuel tank of a machine (Column 5, Lines 10-20)
- e. an operational value measurement means (92) which measures a predetermined operational value related to fuel consumption operation of a machine (Column 13, Lines 33-35)
- f. a communication controller which transmits, to said server, machine information including a volume value of said contents measured by said tank contents amount measurement means and a measurement value measured by said operational value measurement means (Column 13, Lines 64-67)
- g. a communication control unit which receives said machine information from said working machine (Column 13, Lines 64-67)
- h. a remaining fuel volume calculation means which calculates an expected remaining fuel volume value, which is an amount of remaining fuel which ought to be present within said fuel tank based on a measurement value from said operational value measurement means included in said machine information (Column 12, Line 40 through Column 15, Line 26)
- i. volume comparison means, which compares said volume value of contents which has been measured by the tank contents amount measurement

means included in said machine information, with said expected remaining fuel volume value which has been calculated by said remaining fuel amount calculation means (Column 12, Lines 26-39)

4. Reimer does not explicitly disclose the tank contents weight measurement means, remaining fuel weight calculation means, weight comparison means, or alarm issue means as set forth in the claim.

5. However Tatsuya discloses:

- j. tank contents weight measurement means (Paragraph [0012], Lines 1-2)
- k. remaining fuel weight calculation means (Paragraph [0037], ECU 35)
- l. weight comparison means (Paragraphs [0037] and [0038], ECU compares change in weight to change in volume, thus weight comparison means)

6. Therefore it would have been obvious to one having ordinary skill in the art to combine the system disclosed by Reimer with the weight measuring and comparison means disclosed by Tatsuya in order to detect leaks within the fuel system.

7. Further, Reimer/Tatsuya do not explicitly disclose alarm issue means.

8. However, Katayama does disclose an alarm issue means in response to detection of a variable that is significantly different from the desired value within a control system (Column 12, Lines 47-63)

9. Thus it would have been obvious to modify the system disclosed by Reimer/Tatsuya with the alarm issue means disclosed by Katayama in order to notify the user of a discrepancy within the fuel management system.

10. Also, please note that the claims are directed to an *apparatus* which must be distinguished from the prior art in terms of *structure* rather than *function* [MPEP 2114]. Hence, the functional limitations

- a. ***“calculating an expected remaining fuel weight, which is weight of the remaining fuel which ought to be present within said fuel tank (81), based on the volume of said contents which has been measured by said tank contents amount measurement means (11 B) included in said machine information, and on a specific, gravity of said fuel”*** (in regards to the remaining fuel weight calculation means (56))
- b. ***“which compares the weight of said contents which has been measured by said tank contents weight measurement means (11C) included in said machine information, with said expected remaining fuel weight which has been calculated by said remaining fuel weight calculation means (56)”*** (in regards to the weight comparison means (57))
- c. ***“which issues an alarm to said user terminal (20) in response to said volume comparison means (55) and said weight comparison means (57)”***
(in regards to the alarm issue means (58))
- d. ***“issues an alarm to said user terminal (20) when said volume value of contents which has been measured by the tank contents amount measurement means (11 B) does not agree with said expected remaining fuel volume value, whereby a user can detect that fuel in the fuel tank(81) has been stolen”*** (in regards to the wherein said alarm issue means (58))

e. ***"issues an alarm to said user terminal (20) when the weight of contents which has been measured by the tank contents weight measurement means (11 C) does not agree with said expected remaining fuel weight value, whereby the user can detect that foreign matter has been mixed in said fuel tank (81)"*** (in regards to the said alarm issue means (58))

f. **" which transmits, to said server, machine information including a volume value of said contents measured by said tank contents amount measurement means (1 i B) and a measurement value measured by said operational value measurement means (11A)"** (in regards to the a communication controller (13)), which are narrative in form have not been given any patentable weight. In order to be given patentable weight, a functional recitation must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. ***In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)***

12. In Re claim 2, Reimer discloses a fuel management system further comprising

g. refueling amount determination means which, when refueling of said fuel tank is actually executed or when scheduled to be executed, obtains an actual or scheduled refueling amount (Column 5, Lines 20-26)

h. wherein said remaining fuel amount calculation means calculates said expected remaining fuel amount, based on the measurement value from said operational value measurement means, and said refueling amount which has

been obtained by said refueling amount determination means (Column 12, Lines 26-39).

13. The examiner notes that the system disclosed by Reimer stores the remaining fuel and amount and refueling amounts on a dispatch terminal, to be used in comparison with refueling amounts recorded by the driver at a later time.

14. Reimer does not perform the step of adding the refueling amount to the instantaneous remaining fuel amount value, which would provide automatic and continuous checking of a discrepancy in fuel levels.

15. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the manual discrepancy checking disclosed by Reimer with the automatic checking set forth by the applicant, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. In re Venner, 120 USPQ 192.

16. In Re claim 4, Reimer/Katayama disclose a method taught by the invention where said operational value measurement means calculates or measures a fuel injection amount of an engine of said working machine and said remaining fuel amount calculation means calculates a fuel consumption amount of said working machine from said fuel injection amount which has been calculated or measured by said operational value measurement means, and calculates said expected remaining fuel amount from said fuel consumption amount which has thus been calculated (Reimer, Column 14, Line 59 through Column 15, Line 20).

17. In Re claim 9, Reimer inherently teaches a fuel management system wherein, immediately after said working machine starts and immediately after said working machine stops, said tank contents amount measurement means measures the amount of said contents while said operational value measurement means measures said operational value.

18. The examiner notes that the fuel level sensor is continuously detecting the level of fuel, and the processor is continuously counting the hours of operation of the machine.

19. Please note that the claims are directed to an apparatus which must be distinguished from the prior art in terms of structure rather than function [MPEP 2114]. Hence, the functional limitations “the remaining fuel volume calculation means (54) which calculates operating hours of said working machine based on the measurement value measured by said operational value measurement means (11 A) included in said machine information, obtains a volume value of fuel which ought to have been consumed by said working machine (1) with reference to a fuel consumption table (92) based on said operating hours, subtracts said volume value of fuel which ought to have been consumed by said working machine (1) from a volume value stored in a previous time volume storage section (43), and calculates the expected remaining fuel volume value“ which are narrative in form have not been given any patentable weight. In order to be given patentable weight, a functional recitation must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. *In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)*

Response to Arguments

20. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.
21. The examiner further emphasizes, as disclosed in MPEP 2114, that the claimed apparatus must be distinguished from the prior art in terms of structure rather than function, therefore the functional recitations which occur throughout Claims 1, 2, 4, 9 and 11 will not be given patentable weight unless properly claimed as a method.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIZO B. VILAKAZI whose telephone number is (571)270-3926. The examiner can normally be reached on M-F: 10:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen K. Cronin can be reached on (571) 272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SIZO B VILAKAZI/
Examiner, Art Unit 3747

/Stephen K. Cronin/
Supervisory Patent Examiner, Art Unit 3747